FAMILY LYCEUM.

PUBLISHED WEEKLY, AT THE LYCEUM PRESS, No. 3, CORNHILL, BY GEORGE W. LIGHT & Co.

VOL. I. BOSTON, SATURDAY, MARCH 2, 1833. No. 29.

FAMILY LYCEUM.

JOSIAH HOLBROOK, EDITOR.

TERMS: Two dollars a year, in advance. Six copies for ten dollars.

CIRCULAR OF THE AMERICAN SCHOOL AGENT SOCIETY.

THIS society was organized at Andover, Mass., in August, 1832. A number of gentlemen, feeling a deep interest in the subject of elementary education, were then assembled to confer upon measures for the *more general* diffusion of its privileges. In order to secure the accomplishment of this end, and in consequence of many facts, then presented, showing the alarming destitution of large sections of our country, with reference to the means of a thorough common school education, this society was instituted. A partial expose of its objects, and the reasons which led to its formation, was given at that time. The Board of Directors, however, have felt that a more full and specific detail of its plan and proposed method of operation is demanded of those, who would add another to the already numerous benevolent institutions of the age.

The idea of such an association first suggested itself to the mind of the lamented CORNELIUS. Personal observation, at the South and West, had convinced him that some more radical and efficient means of enlightening the mass of the population in those parts of our country, than has yet been put in operation, was absolutely necessary. As powerful levers as the Pulpit and Press are to elevate the public mind, the only fulcrum by which they can successfully operate, he saw to be a system of thorough common school instruction. Such a society, as the A. S. A. Society, he felt to be still a desideratum in order to complete the great system of means for enlightening the mass of mankind;—and to secure the prominent objects sought to be obtained by it, he was about to put into requisition the necessary means, when a mysterious Providence closed his earthly labors. These *objects* are

1st. *To furnish the means of a* THOROUGH ELEMENTARY EDUCATION *to every part of our country;—especially at the* SOUTH and WEST. Any plan narrower in its compass, or less effective in its character than this, does not meet the exigency of our country. The people of the United States must be intelligent. It is a sentiment of universal acknowledgment, that an enlightened yeomanry are the only safe depositories of free institutions. 'In proportion as public opinion gives force to the structure of a government,' said the Father of his country, 'IT IS ESSENTIAL THAT PUBLIC OPINION SHOULD BE ENLIGHTENED.'—The only practical method by which this can be effectually accomplished, is through the instrumentality of common school education. With a view, then, to the establishment of schools in our own, and eventually in foreign parts, the Society proposes

2d. *To act in the capacity of a* LAY EDUCATION *and a* FOREIGN SCHOOL SOCIETY.

The Directors will proceed, as soon as means shall be furnished, to assist young men of suitable qualifications, who are willing to devote their lives to the business of teaching, in acquiring the necessary education.—Teachers thus prepared, they will then send out to such stations as the Board shall deem best, either in our country, or in other parts of the world.

The *means* by which it is proposed to effect these objects are

First. *To secure the concurrence and cooperation of* TEACHERS *generally in the subject, and to employ suitable* AGENTS, *general and particular, to visit the country—make addresses—excite attention to the subject—collect funds, &c.*

It is hoped and confidently believed that Teachers everywhere will make this a common cause. The object is one which must commend itself to every enlightened mind. Let but the friends of education in this country unite, and the work cannot fail to be accomplished. Moreover some such union is necessary to elevate the character and the responsibilities of those who would engage in the business of instruction. As a further means, then, of effecting their ultimate objects, the Society proposes

Secondly. *To encourage an appropriate* PROFESSIONAL *education of Teachers—and the establishment, as far as may be, of self-supporting* SEMINARIES, *for this purpose.*

The business of instruction is as *peculiar*, as *professional*, as the practice of *medicine* or *law*. To be a skilful teacher requires as much training and as much experience, as to be a skilful surgeon. Wrong notions on this subject have far too long prevailed—and the community, too long, have suffered their evil consequences. Hitherto, students, intended for other professions, during their preparatory course, or in the interval between collegiate and professional study—have been employed, very generally, as teachers. Engaging as they have in the business merely for the sake of the emolument—not loving the employment, nor intending to pursue it, only so long as will enable them to escape a worse one—they have calumniated its character and degraded it from the rank of a liberal profession. To correct then these evils, and to raise the business of the teacher to the rank of a distinct profession, is among the most efficient means by which the Society proposes to effect its ultimate ends.

Thirdly. *To introduce generally into schools the* MOST APPROVED SYSTEMS *of moral and intellectual cultivation.*

Common schools, even in the most favored parts of N. England, may be rendered far more efficient than they have ever yet been. As they now are, a great part of the money expended for them is but little better than lost. The time of the scholars, too, is wasted, and their zeal exhausted in fruitless and abortive efforts. If, however, an approved and uniform system of education can be introduced into our common schools, we confidently anticipate a harvest of results richer far than has ever yet been reaped from them. Such an uniformity this Society aims to promote, and in the only practicable way, by an union of all teachers in the enterprise, and a free interchange of their mutual experience.

The Society's first field of operation will be this country;—but prospectively, its field is the world. When the more immediate and pressing demands of our own country shall have been supplied, the Society proposes

Fourthly. *To furnish other countries, now destitute, with the means of instruction.*

That we may not be misunderstood with reference to this particular, we introduce the following communication from one of the Secretaries of the A. B. C. F. Missions:—

'In case your Society shall enter a foreign field, occupied by any missionary society, it should be, I conceive, to effect, in the education of the people, what cannot properly be done by a missionary society. The object of a missionary society is essentially *religious*. All of its plans and efforts must have decidedly a religious bearing. This admits, however, of an immense scope for them in respect to education, considering the profound ignorance of the heathen world, and the number to be taught. Missionary societies may teach the world to read, and must do so to accomplish their object. They may teach writing, and the elementary principles of arithmetic, geography, history, &c. in all their schools. They may establish high schools for the education of teachers, and so may elevate the standard of education in their schools. They may send teachers from this country to a certain extent, and the best they can obtain. In respect to these objects, every foreign missionary society is necessarily a school society.

But there is a limit, perhaps, not perfectly definable, beyond which missionary societies cannot properly go; and that is, in furnishing what may be termed the *apparatus* of education, in distinction from the teachers. We have a scruple, perhaps an erroneous one, about expending large sums upon philosophical apparatus, and yet such apparatus, after a certain amount of instruction, would be an important means of expanding the minds of the more intelligent pupils in our mission schools. We can print a compend of history, but should doubt the propriety of enriching the language of the Sandwich Islands, at the expense of the Board, with a political history of the United States, or of England. We can print a compendium of arithmetic, or grammar, or of almost any other science; but should hesitate to publish at the expense of the Board, a considerable volume on these sciences. But how important that such works be introduced into the language, and before the Islanders themselves can do it; your society, or some other kindred institution, must take this work in hand, and that too before long. I wish your committee would consider the subject.'

This very naturally suggests another topic, to which we would invite attention, viz. the *causes* which have induced the projectors of this association to advance another claim upon the charities and benevolent efforts of the public. These are perhaps sufficiently implied in what has been already said. To satisfy, however, the most sceptical of the expediency of forming such a society, the Directors would present, with more explicitness, their *reasons* for the appeal which they make.

1. *The present defective method of teaching in our schools.* This has been alluded to above, and is so palpable as to need no additional illustration.

2. *The alarming destitution of the means of education in many parts of our country.*

'In New-Jersey, in 1828, 11,742 children were entirely destitute of instruction, and 15,000 adults unable to read. In many of the towns more than half of the children never attend—and in two counties, 48 districts were entirely destitute of schools. In Pennsylvania according to a memorial presented to the Legislature in 1830, there are at least 400,000 children between the ages of 5 and 15. Of them, during the past year, there were not 150,000 in all the schools in the State. In Kentucky there are 51,702 children, of whom only 10,945 attend schools.

In Illinois, 36,000 children out of the 48,000 in the State receive no instruction. Large numbers of the men and women throughout the state, and a great proportion of the children, are wholly unable to read.

In most of the other Southern and Western states the destitution is equally great, though accurate statistical information in regard to many of them cannot be obtained.

According to the most accurate estimate, however, not more than *one third* of the children in those sections of our country enjoy the means of instruction. If this estimate is true, there are now 1,000,000 of children and youth in the United States growing up wholly unfitted for the responsibilites which they are soon to sustain as citizens of our republic. To portray the dire consequences of such a mass of ignorant mind—yet cooperating in giving character to our government,—to expose the crime and anarchy and immorality that must inevitably follow in its train, is most certainly unnecessary.

The admission is already universal, that the perpetuity of all our institutions, social, civil and religious, are dependent upon the intelligence and moral worth of the community. Here is lodged the sovereign power, and unless that power is wielded by enlightened and comprehensive views, it will be but an instrument of vast, incomparable desolation.

3. *The obstacles thrown in the way of other benevolent efforts on account of the want of Education.*

This country, we would fain believe, is destined to act a conspicuous part in diffusing the blessings of liberty and knowledge, and a pure faith, over the rest of the world. But how are all benevolent enterprises enfeebled and paralyzed by ignorance at home! 'Cast first the beam out of thine own eye,' is the precept of sound philosophy, as well as of inspiration. Tone and vigor must be given to the system of society and of benevolent effort here, before a strong and healthful influence will go forth to foreign lands. Let religion and science pervade the mass of society at the South and West—let their benign influence direct and elevate the swelling tide of emigration, now setting in from all parts of the globe, to the great valley of the Mississippi, and it is impossible to estimate the accession of energy and power which will be imparted to every benevolent institution.

Confiding in the merits of their cause, and the obvious and important relations it bears to every other enterprise undertaken for the sake of human improvement and happiness, the Directors of the American School Agent Society confidently make their appeal to an enlightened and christian public for their countenance and support. They contemplate no collision with any other benevolent institution of the day. The field which they propose to enter is as yet unoccupied. This society now comes forward not as the rival, but as the sister and coworker of the now existing societies. Her efforts, hitherto, have been comparatively but few, and those too, sustained only by the feebleness of youth, and under the embarrassment of that frigid paralyzing reception with which the yet unaccredited purposes of benevolence are wont to be received. But though she is young and feeble, she remembers that her elder sisters were once small like herself, and she believes that the spirit of philanthropy and Christian beneficence, which is the common parent of both them and her, will foster and sustain her. Commending her interests then to a wise and benevolent Providence, she throws herself upon the charities and solicitudes of the friends of education—of the cause of suffering humanity—and of the salvation of a world of ruined and perverted, yet immortal mind.

SAMUEL FARRAR, *President.*

RALPH EMERSON,
SAMUEL R. HALL,
JOSIAH HOLBROOK,
FRED. A. BARTON,
} *Executive Committee.*

S. R. Hall has been appointed to solicit donations in aid of the Society in this town, and will thankfully receive contributions from those who are disposed to further its objects.

Communications may be addressed to FREDERICK A. BARTON, *General Agent Andover;* or J. HOLBROOK, *Corresponding Secretary, Boston.*
—[*Journal of Humanity, Andover.*

For the Family Lyceum.

SPECTRAL ILLUSIONS.

ON the inside of the eyeball, back of the vitreous humour, there is spread out a fine delicate membrane, called the *retina*, which is an expansion of the optic nerve, entering at the back of the eye, and communicating with the brain. The eye, in effect, is a *camera obscura*. By means of its intricate structure external objects are painted in miniature on the *retina*, where, in some inexplicable manner, they are seen by the eye of the mind. If the eye is in a perfect state, objects are painted, by reflected rays of light, correctly on the *retina*, and are seen as they really are, by the mind; but if the eye is diseased, effects of a remarkable kind are sometimes produced: and from a want of a philosophical knowledge of its structure and affections, have arisen the numerous accounts on record of spectral apparitions of a supernatural character, which, to timid and credulous persons, have proved sources of great alarm. The following, among other remarkable cases of spectral illusions, described by Dr. Brewster, occurred not long since to a lady in Edinburgh.

'About ten o'clock at night, when Mr. & Mrs. A. were sitting in the drawing-room, Mr. A. took up the poker to stir the fire, and when he was in the act of doing this, Mrs. A. exclaimed, 'Why, there's the cat in the room!' 'Where?' asked Mr. A. 'There, close to you,' she replied. 'Where?' he repeated. 'Why on the rug, to be sure, between yourself and the coal-scuttle.' Mr. A., who had still the poker in his hand, pushing it in the direction mentioned—'Take care,' cried Mrs. A., 'take care; you are hitting her with the poker!' Mr. A. again asked her to point exactly where she saw the cat. 'Why, sitting up there, close to your feet, on the rug; she is looking at me. It is Kitty—Come here, Kitty.' There were two cats in the house, one of which went by this name, and they were rarely, if ever, in the drawing-room. At this time Mrs. A. had no idea that the sight of the cat was an illusion. When she was asked to touch it, she got up for the purpose, and seemed as if she were pursuing something which moved away. She followed a few steps, and then said, 'It has gone under the chair.'—Mr. A. assured her that it was an illusion, but she would not believe it. He then lifted up the chair, and Mrs. A. saw no more of it. The room was then searched all over, and nothing found of it. Mr. A. rang the bell, and sent for the two cats, both of which were found in the housekeeper's room.'

'About a month after this occurrence, Mrs. A., who had taken a somewhat fatiguing drive during the day, was preparing to go to bed about eleven o'clock at night, and sitting before the dressing-glass, was occupied in arranging her hair. She was in a listless and drowsy state of mind, but fully awake. When her fingers were in active motion among the *papillotes*, she was suddenly startled by seeing in the mirror the figure of a near relation, who was then in Scotland, and in perfect health. The apparition appeared

over her left shoulder, and its eyes met hers in the glass. It was enveloped in grave-clothes closely pinned, as is usual with corpses, round the head and under the chin; and though the eyes were open, the features were solemn and rigid. The dress was evidently a shroud—as Mrs. A. remarked even the punctured pattern usually worked in a peculiar manner round the edges of that garment. Mrs. A. described herself as at the time sensible of a feeling like what we conceive of fascination, compelling her for a time to gaze on the melancholy apparition, which was as distinct and vivid as any reflected reality could be, the light of the candles upon the dressing-table appearing to shine fully in its face. After a few minutes, she turned round to look for the reality of the form over her shoulder, but it was not visible; and it had also disappeared from the glass, when she looked again in that direction.'

The above cases of spectral illusion were caused by disease—by a deranged action of the stomach, accompanied with a morbidly sensitive imagination, which affected the corporeal impressions. From these and like causes, have all the phenomena of spectral apparitions been produced; and magnified, as they not unfrequently are, by ignorance and superstition, they have often terrified and enslaved mankind; whereas, had their cause been known, they would have been stripped of all their terror, and might even have been contemplated with pleasure. A.

ESSAYS ON KNOWLEDGE.

BY G. W. LIGHT.

In my first essay, I recognized the doctrine of the existence of a Creator and Governor of the Universe, which I consider established. But this, together with many other propositions which I may assume as correct, without entering into a discussion of them, may be illustrated in the course of the series. I shall however bear in mind the department in which I am writing, and endeavor, in all cases, to keep within the sphere of simple philosophical reasoning.

There are two kinds of knowledge; *intuitive* and *discursive*. Intuitive knowledge is immediate perception of truth; discursive, that which is obtained by deduction of reason. For example—the knowledge that a whole is greater than a part, is obtained by immediate perception; while the knowledge that three angles of a triangle are equal to two right angles, is obtained by deduction of reason.

All the knowledge possessed by the Author of the universe is probably intuitive; all the knowledge man obtains, is acquired by intuition and deduction of reason.

The doctrine of *innate ideas* may be considered as exploded; though there is not so great a difference in the opinions of the different schools of philosophers on this subject, as some suppose. That sensation and reflection furnish mankind with the first materials of all their knowledge, is not now disputed.

It is said that the mind is the eye of the soul. This is undoubtedly true in some sense; but I think it will lead to less confusion, as to terms, to assume that both the mind and the soul are comprehended in the term *mind*. I consider the mind as including all of what is called the spiritual part of man. It may therefore be more proper to say, that the faculty of understanding is the eye of the mind. It is also said, that by knowledge the mind perceives truth, as by vision the eye sees light. This is very well, except that, strictly speaking, *understanding* should be substituted for *mind*, in this case.

Some have been led to the conclusion, that a knowledge of every thing is necessary, in order to understand any one thing fully. This is unsound. If the mind could know all truth, it would be as comprehensive as the mind of God. 'As the eye may see corporeal objects, without seeing the nature, the number, the form, positions of their interior elements, so the mind of man may know things and truths, without knowing all their causes, relations, properties, and effects. The eye may see the ocean, without being able to see its depth or extent; and the mind of man may see God, without being able to know all the perfections of his infinite nature.' One truth after another may be communicated to the mind, in its present state, by intuition and deduction of reason, as perfectly as if it were in possession of all other truths. Every thing above human comprehension, may properly be termed *mystery*.

JUVENILE CONCERT.

Mr. Mason's Juvenile Concert, on Wednesday evening last, was attended by most or all the Members of the Legislature. We were glad to learn that they attended by invitation. The invitation was as benevolent in its general bearing upon the community, as it was generous to the guests, who were both delighted and astonished.

FAMILY INSTRUCTION.

GEOMETRICAL ALPHABET.

The letters of the alphabet like every thing else which has form, embraces some of the first elements of Geometry. Every letter is composed of straight or curved lines, or both. These lines are horizontal, vertical or oblique. They are parallel, perpendicular or oblique. The angles they form are right, acute or obtuse angles. There may be in a letter, one angle, or more; these angles may be equal or unequal.

All these circumstances relating to the letters can be seen and understood by any child four years old; learning them is an exercise which affords pleasure and profit to every mind. If in addition to learning them, they bring into exercise their hands by the use of the slate, pencil and rule in forming them, both the pleasure and the profit are increased. When a child has learned to draw a horizontal or vertical line, he has performed the first, and very important step in writing and drawing. If he be *permitted* to pursue the course his own mind and taste dictates, he will without the *formality of writing copies* for half a score of years, get the art of writing and drawing.

These instruments, the slate, pencil and rule, are a part of the 'Family Apparatus,' which answers the double purpose of employing and instructing children, and relieving parents from their constant calls for something to employ them. It is truly surprising to see how soon children will be able to form with great accuracy, both the geometrical figures, such as triangles, squares, oblongs, rhomboids, pentagons, hexagons, circles, ellipses, &c., and the letters of the alphabet. To do it, they only need the tools to work with, and samples of the work they have to perform. Their own love of action and of improvement, will prompt them to the exercise, and will secure the results.

The letters given above are put upon a card of convenient size to be used by children, which they soon imitate with accuracy upon their slates. And in addition to two cards of printed letters, one of the capitals, and the other of small letters, there is one containing the elements of manuscript letters, with all the letters combined into words, which children also imitate in their *home sports*.

Forming geometrical figures and letters upon slates, is scarcely less profitable for children at school, than at home, especially as they afford the same relief to teachers in the one case, as they do parents in the other, No one who has tried the experiment, doubts the expediency, or great utility of furnishing every child in school, especially the smallest ones, with a slate. We heard a gentleman say a few weeks ago, that a child of his went to school eighteen months, before he learned the alphabet; but after he was furnished with a slate and pencil, and permitted to form the letters, he learned them all in three weeks.

The expense of these articles is so exceedingly trifling, and the uses of them so numerous and important, not only for children, but for parents and teachers, as to recommend them as a part of the furniture of every nursery and school room.

The mode of using these letters, and the advantages of them, will be seen by the following questions, and hundreds of others which any intelligent parent or teacher may ask.

How many letters in the alphabet are composed entirely of straight lines? How many of curved lines, and how many of both straight and curved? How many lines in the letter I; and is it horizontal or vertical? How many lines in L, and what are their position, vertical, horizontal, or both? How many angles do the lines in L make, and what kind, acute, obtuse, or right? How many lines in H are parallel, and how many perpendicular to each other? How many vertical, and how many horizontal? What the number, kind, and position of lines and angles in F and E? How many lines in N, and are they horizontal, vertical, or oblique? Are they perpendicular, parallel, or oblique with each other? Are the angles in N right, acute, or obtuse? What the number, kind, and position of lines in K, M, and Y, each separately? Also in A and Z? What the number and position of lines in V, X, and W? How many obtuse, acute, and right angles in each? How many lines in O, and what kind, straight or curved? Also in C, Q, and S? What the kind, number, and position of lines in D, P, B, R, J, and U? How many letters have horizontal lines, and how many vertical? How many are composed of vertical and oblique? How many are composed entirely of oblique lines?

APPRENTICES' ASSSOCIATION.

We have seldom in our life been more delighted or instructed, than at the anniversary of the 'Mechanic Apprentices' Library Association,' on the evening of the 22d of February. The exercises consisted of an Address and a Poem, both delivered and *written* by apprentices, either of which would have done credit to a college graduate, at his commencement exercise. In addition to much skill in composition, according to the rules of grammar and rhetoric, the efforts were marked with a manly thought and a mature judgment, which were truly gratifying to the numerous ladies and gentlemen present.

The address, in giving an exposition of the plan and results of the society, developed some principles which ought to be much more familiar with the members of other societies for mutual improvement, than they are shown to be by facts. The exercises, and the results of these exercises, also furnish a practical comment, and even a severe stricture, upon the course pursued by most Lyceums, and other societies for social and intellectual improvement. Indeed, this lyceum of *Mechanics' Apprentices* is, upon the whole, the best Lyceum with which we are acquainted, and presents an example worthy of being followed, not only by all the literary and scientific associations in this city, but by all with which we are acquainted in the states.

Most Lyceums are under the mistake, that they can construct a commodious building entirely of posts, or entirely of beams, sills, doors, floors, or windows; forgetting that all of them are indispensable for the strength or use of each other.

Some associations, knowing the great importance of a library, very wisely come to the conclusion to procure one; but not being aware that a library is comparatively of very little use without some *exercises* connected with it, neglect those, and the consequence is, that after a few months, the library being unable to stand alone, falls.

Other societies are formed for *hearing lectures*, once a week; for a few weeks these societies collect crowded houses; but after a few weeks, or at most, months, the crowded houses are left empty and desolate.

Other societies believe that *debates* are most useful, or at least most likely to sustain an interest, which they do for a short time, and but for a short time before the ardor of discussion abates, and the debating society is discontinued.

Another society is of opinion, that a *Cabinet of Natural History* is the most interesting, if not the most important acquisition for science. The consequence is, a fine cabinet is collected, but after a few months, not a solitary visiter calls to see it.

In some Lyceums, the whole dependence is placed upon a set of apparatus; with the belief, perhaps, that the interest it must excite and sustain, will be in proportion to the polish or the expense of the instruments.—But it is soon found, that articles of apparatus, however useful as tools, will not work of themselves. And as few if any persevere in the use of them, they are laid aside, and after a year or two perhaps are thrown into some back chamber or garret among the rubbish.

This APPRENTICES' LYCEUM depends upon no one of these things, but embraces them all, and many others; the consequence is, the interest of the members is sustained from month to month and year to year with increasing vigor. And each department is kept in a healthful and growing state, by the rest. The library is read nearly in proportion to the attention paid to the meetings

and exercises for mutual improvement; and many books, which before these meetings commenced had laid entirely useless upon the shelves, are now found to be among the most useful and the most interesting in their library.

The orator remarked with emphasis, that since the society had established exercises for study and mutual improvement, the youngest members had shown a deep interest in the institution, both by their punctual attendance at the meetings, and by the constant use they made of the books.

Another fact in the history of this interesting Lyceum is particularly worthy of remark, as affording a most useful lesson to all societies for mutual improvement; indeed for every individual who wishes for any improvement. The fact referred to is, the increased prosperity of the institution, since it has been independent of the Mechanics' Association, with which it was originally connected, and upon which it depended. It shows, what would seem hardly to require proof, that a mind cannot improve while it depends on another for instruction —that a child will not be able to walk while he is held up by his parent.

The same most important, and as strange as it may seem, *necessary* lesson, is given in the fact, that Lyceums consisting principally or entirely of farmers and mechanics, or of such as depended upon their own efforts, and not upon the efforts and the public spirit of some three or four gentlemen of a literary profession, have uniformly been the most successful.

Since the measures for rendering Lyceums successful and permanent are so evident and so simple, and so *sure* too, it is a subject of the deepest regret that so few, *very few*, should adopt them. And since this society of *apprentice boys* have set an example, which, if followed, will never fail of success, we most sincerely and most earnestly recommend it to every Lyceum which is or may be formed in the Union. The truth is, we must be nourished by our own food, and live, not by bread alone, but by the variety of food furnished by the goodness of God.

Volcanoes of Iceland.

Iceland, perhaps the *Ultima Thule* of Virgil, about two hundred and sixty miles long, and two hundred broad, forming an extensive portion of the Danish dominions, evinces in every quarter a volcanic origin, and abounds in volcanoes, sulphur, subterraneous fires, and geysers, or eruptive hot springs. Its highest mountains, clothed with perpetual snows, are called Jokuls, and of these Snæfell, in the south-western part of the island, is the loftiest, being calculated at six thousand eight hundred and sixty feet above the level of the sea. Its principal rivers lie towards the east, some of which are white with lime, and others tainted with sulphur. Its calcareous spar has been celebrated ever since the days of Newton for its double refraction. This remote and barren country has been not unfrequently subject to dreadful mortalities from epidemics: the pestilence of this kind that depopulated the island, in the middle of the fourteenth century, was called the Black Death; and according to Catterean, a murrain in 1784 carried off not less than nineteen thousand four hundred and eighty-eight horses, six thousand eight hundred beeves, and twelve thousand nine hundred and forty-seven sheep. This account, however, seems too highly charged, for it exceeds the general average of the cattle of the entire island. Since it has appertained to the Danish crown, a colony endeavoured to ameliorate its wretched situation by migrating to Greenland, about two hundred miles distant, and which now is usually placed in the American quarter of the world; of its success, however, we know nothing, for the eastern coast, on which it probably effected a landing, has since been so extensively blocked up by augmenting sheets of ice, that the colony has never since been explored.—Yet to this wretched verge of the habitable globe was literature compelled to retire in the eleventh and twelth centuries: here learning, driven at that period from every other part of Europe, flourished; poetry was cultivated; and the mythology of the northern nations was first reduced into a systematic form. While feudal tyranny, by the bloodshed and oppression to which it every where gave birth, retained the finest countries of the civilized globe in a state of barbarism; liberty and peace, with science and the arts in their train, took refuge in this inhospitable clime; and found, on the confines of the polar circle, an asylum which the plains of France and Italy could not afford them; a memorable example how much worse the sufferings are produced by art than those produced by nature.

Sulphur Mountain.

Having taken an early breakfast, we set out towards the Sulphur Mountain, which is about three miles distant from Reikavik. At the foot of the mountain was a small bank composed chiefly of white clay and some sulphur, from all parts of which steam issued. Ascending it, we got upon a ridge immediately above a deep hollow, from which a profusion of vapour arose, and heard a confused noise of boiling and splashing, joined to the roaring of steam escaping from narrow crevices in the rock.

This hollow, together with the whole side of the mountain opposite, as far up as we could see, was covered with sulphur and clay, chiefly of a white or yellowish colour. Walking over this soft and steaming surface we found to be very hazardous; and we were frequently very uneasy when the vapour concealed us from each other.

The day, however, being dry and warm, the surface was not so slippery as to occasion much risk of our falling. The chance of the crust of sulphur breaking, or the clay sinking with us, was great; and we were several times in danger of being much scalded. Mr. Bright ran at one time a great hazard, and suffered considerable pain from accidentally plunging one of his legs into the hot clay. From whatever spot the sulphur is removed, steam instantly escapes, and, in many places, the sulphur was so hot that we could scarcely handle it. From the smell, we perceived that the steam was mixed with a small quantity of sulphurated hydrogen gas. When the thermometer was sunk a few inches into the clay, it rose generally to within a few degrees of the boiling point. By stepping cautiously, and avoiding every little hole from which steam issued, we soon discovered how far we might venture. Our good fortune, however, ought not to tempt any person to examine this wonderful place, without being provided with two boards, with which every part of the banks may be traversed in perfect safety. At the bottom of this hollow we found a cauldron of boiling mud, about fifteen feet in diameter, similar to that on the top of the mountain, which we had seen the evening before; but this boiled with much more vehemence. We went within a few yards of it, the wind happening to be remarkably favourable for viewing every part of this singular scene. The mud was in constant agitation, and often thrown up to the height of six or eight feet. Near this spot was an irregular space filled with water boiling briskly. At the foot of the hill, in a hollow formed by a bank of clay and sulphur, steam rushed with great force and noise among the loose fragments of the rock.

Further up the mountain, we met with a spring of cold water, a circumstance little expected in a place like this. Ascending still higher, we came to a ridge composed entirely of sulphur and clay, joining two summits of the mountain. Here we found a much greater quantity of sulphur than on any other part of the surface we had gone over. It formed a smooth crust from a quarter of an inch to several inches in thickness. The crust was beautifully chrystallized, and immediately beneath it we found a quantity of loose granular sulphur, which appeared to be collecting and crystallizing as it was sublimed along with the steam.

Sometimes we met with clay of different colours, white, red, and blue, under the crust; but we could not examine this place to any depth, as, the moment the crust was removed, steam came forth, and proved extremely annoying. We found several pieces of wood, which were probably the remains of planks that had been formerly used in collecting the sulphur, small crystals of which partially covered them. There appears to be a constant sublimation of this substance; and were artificial chambers constructed for the reception and condensation of the vapours, very much of it might probably be collected. As it is, there is a large quantity on the surface; and, by searching, there is little doubt that great stores may be found. The inconvenience proceeding from the steam issuing on every side, and from the heat, is certainly considerable; but, by proper precautions, neither would be felt so much as to render the collection of the sulphur a matter of any great difficulty. The chief obstacle to working these mines, is their distance from a port whence the produce could be shipped. But there are so many horses in the country, whose original price is trifling, and whose maintenance during summer costs nothing, that the conveyance of sulphur to Reikavik presents no difficulties which might not probably be surmounted.—[*Mackenzies' Travels.*

Geological Map.

Two hundred and fifty dollars would furnish every school district and every Lyceum in the state with a copy of the Geological Map, and add to its value at least a hundred fold.

Labor and Study.

A Student in the Valley of the Mississippi Forty-five Years Ago.

It has recently been my privilege to spend a short time with Rev. Dr. ——, in one of the states west of the mountains. He furnished a fund of facts relating to the early settlement of this great Valley, which were to me new and truly valuable. None, however, so deeply interested me, as one concerning himself.

In 1782, when a lad ten years old, the Doctor crossed the mountains with a step-father, and settled in East Tennessee. In a short time the father recrossed the mountains on business, and left the son in school. While absent, the father died, and the fatherless son in the West was cheated out of $20,000 which it was known the father had given him by will. When the Doctor ascertained that he was thus left without pecuniary resources, and found himself in debt for tuition and board, he resolved to leave the school. But his teacher, being unwilling he should relinquish the idea of completing his education, promised there should be no charge for tuition, and encouraged him to hope for some opening by which he would be able to earn his board.

Soon after, a gentleman in the vicinity offered him the use of his saw-mill from dark to daylight, and 17 cents for every hundred feet he would saw. On his way home, the Doctor usually crossed a hill abounding with pine-knots. From these he always took a load and carried to the mill, as he went for his supper. Immediately after supper, he returned to the mill, and kindled fire with the knots, which furnished him sufficient warmth and light.—When he had rolled on a log, and put the saw in motion, he took his book and studied till the saw stopped, and then he would drop his book, move the log or roll on another, start the saw, and return to his studies. Thus he studied and worked alternately, till he became too sleepy to use the book, and then instead of studying, he took a half-reclining and half-sitting posture, with the cold wind warded off by blankets, and slept with his foot on a stick, that sprung when the saw stopped. Being thus awaked, he would put the saw in motion again, and sleep till roused by the springing of the stick. In this manner, through the winter and spring, he sawed all night six times a week, and earned on an average one dollar a night. The Doctor says he never advanced more rapidly in his studies than during that season, and that he then formed the habit which he shall maintains, of satisfying nature with a much smaller amount of sleep than is generally taken.

With the money thus raised, he was able to pay up his old debts, and struggle forward until he was ready to enter college. To meet his expenses in college, he labored four months as surveyor in an entirely unsettled section of the Valley. During the whole period, he never slept in a house, and rarely ever met a white man. He frequently went to sleep in the cane brake, to avoid the Indians, and with nothing but a blanket to defend himself from the moisture of the earth and atmosphere. Sometimes he would awake in the night, and find the rain descending in torrents, and the water almost ready to run over his body. To prevent this, he laid logs some distance from each other, so that the waters could run between them, and then rolled himself up in his blanket, and laid down on the logs and slept through the night.

For this laborious and dangerous service he received fourteen horses, in that section of the country worth about $40 apiece.—On the reception of this drove, he formed the plan of taking it to the eastern shore, a distance of 700 miles, where he rightly supposed his horses would bring him more than double what they could be sold for on the spot.

Before this, he received a letter from an uncle residing in Maryland, inviting him to come there and see him. The uncle had been made acquainted with the fraud by which he had been deprived of his father's property, and with the fact that he was anxious to complete his education, and in his letter offered any assistance in his power to secure this object.

Before commencing this journey, the Doctor purchased an Indian hunting dress, buckskin breeches, beads, and the whole suit complete.—On his arrival in Maryland he found his uncle ready to render prompt assistance in making profitable sale of his horses. Soon after his arrival he produced his Indian dress, and informed his uncle that he purchased it to wear into the large towns in order to attract attention and secure a speedy sale of his drove. His plan was highly approved and its efficiency tested the very next day. The Doctor accoutred in his Indian suit, with two of his cousins, took four of his horses and rode about four miles to a general muster. He had hardly been on the ground fifteen minutes before the whole multitude was at his heels, and his horses were soon taken off of his hands for 150 dollars apiece. His cousins were soon sent back for more horses, which were as speedily sold. In about one week, the whole drove was sold for over $1500 over and above the expenses of the journey. With this sum Dr. B. paid up his debts, and went through Carlisle College.

I have written the above in order to show your readers what obstacles many of our best western preachers have been obliged to encounter, while obtaining their education. I know your readers will not feel half the interest in this narrative, that they would have done if they could have heard it from the Doctor's own lips, as I did. But such as it now is, they may see that the essence of the system of manual labor schools is no new thing; that it was long since, by experiment, ascertained to be practicable for a young man to earn his own support, and at the same time obtain a thorough complete education. For no man west of the mountains has done more by organizing and nourishing churches, and preparing young men for the ministry, than this same Doctor B——.—[*Boston Recorder.*

School Agent Society.

We invite the attention of our readers to the Circular of the School Agent Society, on the first page. We are particularly desirous that the object and plan of this institution should be understood, as they are such, as when understood, every man, woman, and child in the land can participate in. Its prominent object is to promote a general system of cooperation among the friends of Education and of humanity, both in America and Europe, and in the islands of the sea. It is taking measures to procure, qualify, and aid travelling and stationary agents, in the great and common cause of intellectual and moral improvement. The business of these agents is to co-operate with Lyceums and schools already established, and establish others where it is practicable; and where neither can be done, to give what instruction is practicable, by occasional meetings of parents and children, for the purpose of promoting family instruction.

The two first steps which seem desirable, to secure the objects of the society, are, to collect those who are disposed to embark in the enterprise, and to bring about a general organization of Lyceums throughout the country. When these two steps are taken, the way appears to be clear and easy to effect a great intellectual and moral revolution, not only in the American Republic, but throughout the world. When these two steps are secured, how easy it would be to civilize and christianize the Indians west of the Mississippi, and the natives of Africa, in the interior of their continent. How very easy it would be to have all the towns and villages on our own continent adorned with Lyceums, so richly endowed with libraries, apparatus, specimens of nature and art, that each would form a centre of attraction for intelligence and refinement—a place of intellectual and social resort for both sexes, all classes and ages. How easy it would be to institute a system of exchanges, both in matter and mind, throughout the civilized world. Indeed, how easy it would be to civilize and christianize our globe.

We present this subject as the grandest and most feasible enterprise for profitable, pleasant, and benevolent effort to a very large number of young men, and young ladies too, which is now before an intelligent and christian public. If a thousand or two thousand agents could be found disposed and qualified to engage in this enterprise, they could all find employment, and so much the better the greater the number. They could do much to strengthen each other's hands, as well as to cooperate with other individuals and with institutions throughout the country. We most earnestly hope the meeting of the Society to be held in Andover, on the 27th of this month, will collect a large number of those disposed to engage in its objects or to learn its plans.

School Library.

The editor of the Family Lyceum has for two or three years contemplated, as soon as other objects rendered it practicable, the collection and a continued series of books fitted for Common School Libraries. Many schools are already furnished with more or less books, though not with as many or as good ones as might be wished. The time is certainly near, when each of the 50,000 schools in the United States will have its Library, with annual and monthly accessions to enrich its shelves. Such progress is now made in this object, as to afford a prospect of making a speedy beginning—of offering a few volumes, with a continued series of a dozen or twenty volumes a year in future.

BOOK OF NATURE.

STRUCTURE OF FISHES.

In attending to these, we will soon observe, that if the body of birds is shaped in the most convenient manner for making its way through the air, a no less extraordinary degree of Divine wisdom is evident, in the conformation of the finny inhabitants of the deep to that element in which they exist. To make these creatures buoyant and flexible, yet firm to oppose the strongest current, the Great Creator has constituted them of very different materials, and of a different construction from other animals. To enable them to traverse with ease and swiftness the watery regions, the greater part of them have the same external form, sharp at each end, and swelling in the middle. To preserve them from being hurt by the action and temperature of the surrounding fluid, as well as to enable them to glide more smoothly through it, many of these are covered with a coat of scales, others with a fat oily substance, and the whole with a slimy glutinous matter, (supposed to be secreted from the pores of their bodies.) A protuberant eye would have been inconvenient, and easily injured by moving in such a dense medium, but to prevent this the eyes of fishes are sunk into their heads, and the cornea made flat, while the defect of vision that must have inevitably ensued in consequence, had they been formed like those of other animals, is provided against by the spherical form of the crystaline humor. As their progression is performed in a different way from that of any of the tribes we have already noticed, they are provided with instruments peculiar to themselves, and are enabled to poise their bodies and push swiftly along by means of their fins and tail. Not being provided with hands or feet to lay hold on their prey, or with talons or bills to tear it to pieces, nature has provided them with mouths capable of great extension, when they have occasion to seize on their victims, yet so formed, that when shut up close, they terminate in a point, in which an opening is scarcely distinguishable. What a tremendous chasm, for instance, does the mouth of a Shark present when extended to receive a human carcase, of which this voracious monster has given instances of being extremely fond, and yet, when closed, it appears but a continuation of that long snout with which this fish, (reckoned among the swiftest of swimmers,) like an arrow pierces the watery element.

In the absence of *necks*, which would make the head too apt to be turned aside when making their way against a stream, the whole bodies of fish are so formed, as to be easily turned with a slight stroke of the tail; for when a fish desires to turn, a blow from the tail sends it about in an instant; and when it strikes both ways the motion is progressive, and enables it to start forward with an astonishing velocity.

One distinguishing appendage peculiar to the finny tribe, and which is found in the bodies of all spinous or bony fish, is the *air bladder*, by means of which they can make themselves more or less buoyant, and rise or fall in the water at pleasure. 'This,' as Dr. Paley observes, 'affords a plain and direct instance, not only of contrivance, but strictly of that contrivance which we denominate mechanical. *It is a philosophical apparatus in the body of an animal.* The principle of the contrivance is clear.' The rising and sinking of a fish in the water, so far as is independent of the strokes of the fins and tail, can only be regulated by the specific gravity of the body. When the bladder, contained in the body of the fish, is contracted, which it probably possesses a muscular power of doing, the bulk of the fish is contracted along with it; whereby, since the absolute weight remains the same, the specific gravity, which is the sinking force, is increased, and the fish descends; on the contrary, when, in consequence of the relaxation of the muscles, the elasticity of the inclosed, and now compressed air, restores the bladder, the fish becomes proportionally lighter, and rises in the water.

If the attributes of the Deity are so conspicuously displayed in the general structure and conformation of fishes, they are no less so in the infinity of their number and sizes; in the provision made for at once keeping up the numbers of this most numerous of all classes, and preventing the sea from being over-stocked; and in that peculiarity of form and structure, so essentially necessary in the different species.

In this mighty reservoir it may emphatically, indeed, be said, 'there are creatures *innumerable* both small and great.' Linnæus, however, reckons upwards of *four hundred* species; but it is extremely probable, that numbers are concealed in the vast extent and profundity of the ocean, which have never yet been exposed to human observation! But who can count the numbers in each species? For who can attempt to calculate the numbers in those prodigious shoals that tinge the sea with their color without taking into consideration 'those scaly herds, and that minuter fry, which grace the seaweed, or stray through the coral grove;' and what a diversity and variety of *sizes* do they assume, from the massy whale that sports at large in the Greenland Seas, to those minute creatures which enter our creeks, and take up their abode in our harbors.

Yet, notwithstanding the prodigious numbers of some of these animals, and the stupendous size of others, as we observed before, they are all conveniently lodged and fed; which is the more surprising, if we take into consideration the amazing fecundity of some, and the longevity of others of these creatures. It is asserted of the *Herring*, that if suffered to multiply unmolested and its offspring to remain undiminished during the space of twenty years, it would show a progeny many times greater in bulk than the whole earth!—that a single *Cod-fish*, will produce at a birth, if they escape depredation, a number equal to that of the inhabitants of England. The *Flounder* is said to produce above a million at a time, and a *Mackerel* not less than five hundred thousand; and in regard to the longevity of fishes, several are said to live upwards of an hundred years. How then, it may be asked, are those myriads of subjects of the watery kingdom kept within due limits? How comes it to pass, that the mighty basin is not overstocked? And how are its numerous tenants provided with food? This must be principally owing to the prevalence of the predatory system among fishes; for numerous as are the draughts taken from the bosom of the ocean for the service of man, they can bear no proportion to the number that are left behind. But the sea, like the land, abounds not with a profusion of vegetables so as to be sufficient for the support of *all*, or even the greater part of its inhabitants, many of which are known to be of the most greedy and voracious natures. It was absolutely necessary therefore, that they should devour one another, and the experience of ages has proved, that great as the increase of these creatures is, and has been, it has never as yet been more than enough; that the balance has hitherto been pretty equally kept up, and that while the astonishing prolific powers of the finny tribes have been found sufficient for keeping a constant supply, and making up for every waste, yet there will always be found a requisite number of hungry mouths to devour the overplus. A single Pike has been known to devour one hundred Roaches in three days. Whatever is possessed of life seems the most desirable food of fish. Some of the smallest feed upon worms and spawn; others, whose mouths are large, seek larger prey, it matters not of what kind, or whether it is or is not of their own species. Those with the largest mouths pursue almost every thing that has life; and often meeting each other in fierce opposition, the fish with the largest swallow comes off victorious by devouring its antagonist!

In regard to the peculiar construction of fishes, we will briefly remark, that the *Whale* has often occasion to ascend to the surface of the water for the purpose of breathing, and it has a tail peculiarly constructed to enable it to do so. His coat of blubber may be absolutely necessary to make his body equiponderate in the water, and to keep his blood warm; while in the absence of offensive weapons he is possessed of extraordinary agility, and by a stroke of his tail can deal destruction to his pursuer. The strength of this fish lies chiefly in the tail. A boat has been cut down from the top to the bottom, by means of this formidable instrument, though the gunnel on the top was of tough wood. Another has had the stern-post, three inches thick, cut off smooth, without so much as shattering the boat, or drawing the nails of the boards.

The *Cod*, the *Haddock*, the *Whiting*, and others, whose principal element is in the middle region of the ocean, have an *air bladder* to raise and depress them at pleasure; while the *Scate*, the *Thornback*, and others, that grovel mostly at the bottom, are destitute of this wonderful instrument. The *Narwhale*, being a harmless and peaceable animal, may probably make use of the horn which rises from its brow for the purpose of breaking the ice, or disengaging the plants on which it feeds from the bottom of the sea. The *Sword-fish* will not fail to attack even the Whale himself, and with what a fearful and dangerous weapon is he armed for the purpose. Of all the inhabitants of the deep, the *Shark* is the fiercest and most voracious, and in celerity of movement surpasses most, if not all, of the finny race; but to counterbalance powers, and an appetite for destruction, that might thin the ocean, there is a strange singularity in the projecting of his upper over his under jaw, so that he is obliged to turn in order to take hold of his prey, and while he is doing so his victim often makes its escape. *Crabs, Lobsters, Wilks, Muscles*, and other shell-fish, are the food of the *Wolf-fish;* and for the purpose of effecting the destruction of such well-defended prey, this animal is provided with teeth remarkable for their strength. The *Flying-fish* has many enemies in both elements, but it is provided with instruments by which it can betake itself either to the water or the air, as occasion may require. In the tropical climates these fishes, when hotly pursued, are seen springing by hundreds out of the water, and sometimes throw themselves on board of ships in order to escape their various assailants. The predaceous fishes that swim in the ocean, and all the birds of prey that range its surface, seem to be combined against it. It is no wonder, therefore, that the beneficent Author of nature has endowed a fish exposed to so many enemies, with a two-fold power to escape.

The structure of the *Sucking-fish* enables it to attach itself firmly to the bodies of animals; that of the *Ammodytes*, or *Sand-Eel*, particularly the head, is most excellently formed for piercing into the sand. The flatness of the *Scate* and *Flounder* enable them to cover themselves up in the sand or mud, when they lay in wait for their prey; and the *Turbot* is said to be provided with a skin or membrane, which draws over his eyes when he has occasion to stick fast at the bottom in stormy weather. The *Globe-fish* is beset with prickles like a hedge-hog, and bids defiance to all birds of prey. The *Torpedo* benumbs on a sudden, and renders impotent whatever fish it assaults: it is said also to strike the fisherman's arm, when he attempts to lay hold on it, with a temporary deadness. 'The instant,' says Kempfer, 'I touched it with my hand, I felt a terrible numbness in my arm, and as far up as my shoulder. Even if one treads upon it with the shoe on, it affects not only the leg, but the whole thigh upwards.'—The *Toporific-Eel* imparts a sensation similar to that which is experienced from electricity. The *Cuttle-fish* is furnished with a liquid magazine of an inky color, to darken the waters when pursued by an enemy. The *Galley-fish* is protected by the caustic quality of the substance with which its legs are smeared. The abhorent appearance of the *Sea Orb* is sufficient to disgust men from handling it, and more so to deter them from partaking of its poisonous quality by way of food. And it is not improbable but the hideous form of the *Sea-Devil*, and other monsters of the deep, may have been stamped upon them by nature, (which does nothing in vain,) for similar purposes.

THE INSTINCTS OF FISHES.

Fishes, it is said, appear inferior to beasts and birds in acuteness of sensation and instinctive sagacity; but how is this reconcilable with that tenderness, care, and solicitude, (which nothing can exceed,) which the common Whale evinces for her young. She suckles and nurses them with the greatest affection, takes them with her wherever she goes; when pursued she carries them on her back, and supports them with her fins; when wounded she will not relinquish her charge, and when obliged to plunge, in midst of her agonies, will clasp them more closely, and sink with them to the bottom. —Mr. Waller in his beautiful poem of 'The Summer Islands,' relates a story, in which the maternal tenderness of the Whale is most affectingly displayed. A whale and her cub had got into an arm of the sea, where, by the defection of the tide, they were entirely enclosed. The people on shore beheld their situation, and drove down upon them in boats, with such weapons as could be hastily collected. The animals were soon severely wounded, and the sea tinged with their blood. After several attempts to escape, the old one forced over the shallow into the depths of the ocean; but though in safety herself, she could not bear the danger that awaited her young one; she therefore rushed in once more where the smaller animal was confined, and as she could not carry it off, seemed resolved to share its danger. The tide, however, coming in, both were enabled to escape from their enemies, after sustaining a number of wounds.

The fidelity of whales to each other is also said to exceed even what we observe in birds; and Goldsmith relates an instance, in which a female whale being wounded while her attached partner was reclining by her side, on beholding the object of his tenderness falling a victim to the harpooners, he stretched himself upon her body, and participated in her fate.

It is curious to remark what sagacity the finny tribes display in seeking out the most proper places for depositing their spawn. The Salmon on her journey up the river, will suffer no obstacle that she can possibly surmount to oppose her progress to the place of her destination, and in order to attain it, will spring over cataracts several feet high. In going upwards she will keep at the bottom where the current is weakest, and when she returns, will avail herself of its strength at the top, by swimming near its surface!

The migration of different kinds of fishes are truly astonishing; and it is pleasing to remark, that it is when fat and in season for eating that they are taught so instinctively to throng our bays and creeks, while they disperse to the remotest quarters of the globe when lean and emaciated. 'Who,' in the words of the celebrated Hervey, 'Who bids these creatures evacuate the shores, and disperse themselves into all quarters, when they become worthless and unfit for our service? Who rallies and recalls the undisciplined vagrants, as soon as they are improved into desirable food? Who appoints the very scene of our ambush to be the places of their rendezvous, so that they come like volunteers into our nets? Surely the furlough is signed, the summons issued, and the point of re-union settled by a Providence ever indulgent to mankind; ever studious to treat us with dainties and load us with benefits.' Not only do the Herrings, the poor man's feast, visit our shores at stated periods, and solicit us by their numbers to partake of the bounties of Providence, but the Pilchard, the Mackarel, the Lampreys, the Tunnies, and the Salmon, are regular in their migrations.

At the time the Land Crabs of the West Indies arrive upon the coast to deposit their eggs, numerous fishes of different kinds punctually attend, as if timeously advised of the exact time when they might expect their annual supply, and greedily devour many of the eggs before they are hatched.—Fishes, in order to be fed, have been taught to assemble at the side of a pond by the sound of a bell. Dr. George Serger asserts, that having taken a walk with some friends in the fine gardens of the Archbishop of Saltzburg, the gardener conducted them to a very clear piece of water, in which no fish were at first to be seen, but that the man had no sooner rung a little bell, than a multitude of trouts came together from all parts of the pond, to take what he had brought them, and disappeared as soon as they had eat it up.

The Lamprey makes holes in the gravelly bottom of the river previous to depositing her ova. The Sea-Dog, in a storm, is said to conceal her young under her belly. A curious circumstance has been observed relative to the young Sharks, that when pursued, they will on the appearance of danger, take refuge in the belly of the mother. It is asserted by Pliny, that the Fishing-Frog hides itself in muddy water, and makes use of a singular artifice to secure her prey. The Ink-fish seems to be well informed of the use she ought to make of her natural bottle, and when pursued, discharges its contents in the way of her foe. The arborescent Star-fish, like the spider, spreads out her net in order to entangle her unwary victim. And the little Thresher, in order to get the better of his formidable antagonist, tumbles neck over heels, and falls down with astonishing force on the back of the Whale, while his ally, the Sword-fish, wounds him from underneath.

QUESTIONS ON LYCEUM No. 28.

What were the two first acts done by Columbus and his men, after they landed in the New World?

What islands did he discover in his first voyage?

How were the Spaniards received by the natives?

What did Columbus do to carry a knowledge of his discovery to Europe, in case he should be lost?

When did he sail on his second voyage? and when on his third?

Who accompanied him on his fourth and last voyage?

When was the first Automaton Chess Player constructed, and by whom?

By what means was it first supposed to perform its operations?

In what costume is it represented?

To what work are those referred who wish to examine this subject?

Which are most simple, and easily performed by children, the letters of the alphabet, or the elementary figures in Geometry?

Which do children learn most readily, and with the greatest pleasure, the geometrical figures, or the combination of numbers?

What mistakes do parents usually commit, in learning children to count?

What do children learn of their own accord, during the two first years of their lives?

Are the first principles of Geometry fitted or unfitted, agreeable or irksome, to children to learn?

The names of how many different objects have children frequently been known to learn in an hour?

Why cannot children learn the names of letters as quick as they can the names of the geometrical figures?

What exercise will aid and interest children in learning letters and geometrical figures?

Of what shape are the geometrical blocks, or children's bricks, designed for juvenile instruction and amusement?

With which do children soonest become tired, the geometrical blocks, or the common toys put into their hand?

What method is adapted to acquaint children with words and letters, in their amusement with their bricks?

Do children ever fail of learning words and letters, when this mode is adopted?

What is a natural loadstone, and where found?

What properties distinguish magnets from other bodies?

Which retains the magnetic principle longest, soft iron or hardened steel? and which is most easily charged with it?

What is the prominent object of Washington (Pa.) College, and how does it propose effecting it?

How many different kinds of joints are formed in the human machine?

What are the motions of the limbs at the elbow joints, revolving or reciprocal? also, at the shoulder joint?

What is the difference between the joints at the knee and the one at the hip?

What is the cause of winds?

When air is heated, does it become heavier or lighter? and which way does it move, up or down?

In what direction does the heated air at the equator move?

What are some of the uses of the expansion of water by heat?

Where is found the grandest operations arising from the expansion of water, in nature or the arts?

Is the quantity of water evaporated by expansion greater or less than all that is carried by rivers into the ocean?

Which state has procured a geological map?

What farther use can be made of it than has been made?

Where is the proper place for the knowledge collected by it to be deposited, with the professor who procured it, and in the book, or in the heads of children?

What other states besides Massachusetts have made some progress in geological collections and surveys?

What would be some of the uses of Cabinets of Natural History in all our schools?

What has been done in New Jersey for Lyceums and Mineralogy?

What is doing in New Orleans for science and Cabinets of Natural History?